

Claims

1. A mutant *Bacillus* bacterium comprising, on the genome or plasmid thereof, DNA having a promoter sequence recognized and transcribed specifically during the sporulation stage, and a *sigA* gene or a gene equivalent thereto, the promoter sequence being ligated to an upstream end of the *sigA* gene or a gene equivalent thereto.

2. The mutant *Bacillus* bacterium as described in claim 1, wherein the promoter sequence specifically recognized and transcribed during the sporulation stage is a promoter sequence for expressing a *sigH* gene of *Bacillus subtilis* or a sequence equivalent thereto and/or a promoter sequence for expressing a *spoIIA* operon of *Bacillus subtilis* or a sequence equivalent thereto.

3. The mutant *Bacillus* bacterium as described in claim 1 or 2, wherein a bacterium belonging to the genus *Bacillus* is *Bacillus subtilis*.

4. The recombinant microorganism which is produced by introducing genes encoding heterologous proteins or polypeptides into the mutant *Bacillus* bacterium as described in any one of claims 1 to 3.

5. A method for producing a protein or a polypeptide by use of the recombinant microorganism as described in claim 4.

6. The method as described in claim 5, wherein the protein is cellulase, amylase, or protease.

7. The method as described in claim 6, wherein the

cellulase is an alkaline cellulase which has an amino acid sequence represented by SEQ ID NO: 4, or a protein which has a homology of 70% or more to the amino acid sequence and alkaline cellulase activity.

8. The method as described in claim 6, wherein the amylase is an alkaline amylase which has an amino acid sequence represented by SEQ ID NO: 19, or a protein which has a homology of 70% or more to the amino acid sequence and alkaline amylase activity.

9. The method as described in claim 6, wherein the protease is an alkaline protease which has an amino acid sequence represented by SEQ ID NO: 21, or a protein which has a homology of 70% or more to the amino acid sequence and alkaline protease activity.

10. A method for constructing a mutant *Bacillus* bacterium, characterized by constructing, on the genome or a plasmid of a bacterium belonging to the genus *Bacillus*, DNA having a promoter sequence recognized and transcribed specifically during the sporulation stage, and a *sigA* gene or a gene equivalent thereto, the promoter sequence being ligated to an upstream end of the *sigA* gene or a gene equivalent thereto.